Appendix A: Glossary of Terms and Acronyms

NEPA TERMINOLOGY

The controlling definitions for terms under CEQ's NEPA regulations are contained at 40 CFR. The numbers in parentheses refer to the appropriate section of 40 CFR. These definitions are provided as a supplement to those regulatory definitions.

Categorical exclusion (CE) (1508.4)—An action with no measurable environmental impact which is described in one of the categorical exclusion lists in section 3-3 or 3-4 and for which no exceptional circumstances (section 3-5) exist. NPS also uses the acronym "CX" to denote a categorical exclusion.

Connected actions (1508.25)—Actions that are closely related. They automatically trigger other actions that have environmental impacts, they cannot or will not proceed unless other actions have been taken previously or simultaneously, or they are interdependent parts of a larger action and/or depend on the larger action for their justification.

Conservation planning and impact assessment—Within NPS, this process is synonymous with the NEPA process. This process evaluates alternative courses of action and impacts so that decisions are made in accord with the conservation and preservation mandate of the NPS Organic Act.

Cooperating agency (1508.5)—A federal agency other than the one preparing the NEPA document (lead agency) that has jurisdiction over the proposal by virtue of law or special expertise and that has been deemed a cooperating agency by the lead agency. State or local governments, and/or Indian tribes, may be designated cooperating agencies as appropriate (see 1508.5 and 1502.6).

Cultural resources (NPS-28, Appendix A)—Aspects of a cultural system that are valued by or significantly representative of a culture or that contain significant information about a culture. A cultural resource may be a tangible entity or a cultural practice. Tangible cultural resources are categorized as districts, sites, buildings, structures, and objects for the National Register of Historic Places, and as archeological resources, cultural landscapes, structures, museum objects, and ethnographic resources for NPS management purposes.

Cumulative actions (1508.25)—Actions that, when viewed with other actions in the past, the present, or the reasonably foreseeable future, regardless of who has undertaken or will undertake them, have an additive impact on the resource the proposal would affect.

Cumulative impact (1508.7)—The impacts of cumulative actions.

Direct effect (1508.8)—An impact that occurs as a result of the proposal or alternative in the same place and at the same time as the action.

Environmental assessment (EA) (1508.9)—A brief NEPA document that is prepared to (a) help determine whether the impact of a proposal or alternatives could be significant; (b) aid NPS in

compliance with NEPA by evaluating a proposal that will have no significant impacts, but that may have measurable adverse impacts; or (c) evaluate a proposal that either is not described on the list of categorically excluded actions, or is on the list but exceptional circumstances (section 3-5) apply.

Environmental impact statement (EIS) (1508.11)—A detailed NEPA document that is prepared when a proposal or alternatives have the potential for significant impact on the human environment.

Environmental screening process—The analysis that precedes a determination of the appropriate level of NEPA documentation. The minimum requirements of the environmental screening process are a site visit, consultation with any agency that has jurisdiction by law or special expertise, and the completion of a screening checklist. The process must be complete for all NPS actions that have the potential for environmental impact and are not described in section 3-3.

Environmentally preferred alternative (1505.2, Q6a)—Of the alternatives analyzed, the one that would best promote the policies in NEPA section 101. This is usually selected by the IDT members. It is presented in the NPS NEPA document (draft and final EIS or EA) for public review and comment.

Exceptional circumstances—Circumstances that, if they apply to a project described in the NPS categorical exclusion lists (sections 3-3 and 3-4), mean a CE is inappropriate and an EA or an EIS must be prepared because the action may have measurable or significant impacts. Exceptional circumstances are described in section 3-5.

Finding of no significant impact (FONSI) (1508.13)—A determination based on an EA and other factors in the public planning record for a proposal that, if implemented, would have no significant impact on the human environment.

Human environment (1508.14)—Defined by CEQ as the natural and physical environment, and the relationship of people with that environment (1508.14). Although the socioeconomic environment receives less emphasis than the physical or natural environment in the CEQ regulations, NPS considers it to be an integral part of the human environment.

Impact topics—Specific natural, cultural, or socioeconomic resources that would be affected by the proposed action or alternatives (including no action). The magnitude, duration, and timing of the effect to each of these resources is evaluated in the impact section of an EA or an EIS.

Indirect impact (1508.8)—Reasonably foreseeable impacts that occur removed in time or space from the proposed action. These are “downstream” impacts, future impacts, or the impacts of reasonably expected connected actions (e.g., growth of an area after a highway to it is complete).

Issues—In NEPA, issues are environmental, social, and economic problems or effects that may occur if the proposed action or alternatives (including no action) are implemented or continue to be implemented.

Lead agency (1508.16)—The agency either preparing or taking primary responsibility for preparing the NEPA document.

Major federal action (1508.18)—Actions that have a large federal presence and that have the potential for significant impacts to the human environment. They include adopting policy, implementing rules or regulations; adopting plans, programs, or projects; ongoing activities; issuing permits; or financing projects completed by another entity.

Memo to file—A memo to the planning record or statutory compliance file that NPS offices may complete when (a) NEPA has already been completed in site-specific detail for a proposal, usually as part of a document of larger scope, or (b) a time interval has passed since the NEPA document was approved, but information in that document is still accurate.

Mitigated EA (Q40)—An EA that has been rewritten to incorporate mitigation into a proposal or to change a proposal to reduce impacts to below significance.

Mitigation (1508.20)—A modification of the proposal or alternative that lessens the intensity of its impact on a particular resource.

NEPA process—The objective analysis of a proposal to determine the degree of its environmental and interrelated social and economic impacts on the human environment, alternatives and mitigation that reduce that impact, and the full and candid presentation of the analysis to, and involvement of, the interested and affected public.

Notices of availability—Separate notices submitted to the *Federal Register* that the draft EIS and the final EIS are ready for distribution.

Notice of intent (1508.22)—The notice submitted to the *Federal Register* that an EIS will be prepared. It describes the proposed action and alternatives, identifies a contact person in NPS, and gives time, place, and descriptive details of the agency's proposed scoping process.

Preferred alternative (1502.14 (e))—The alternative an NPS decision-maker has identified as preferred at the draft EIS stage or EA. Identification of the preferred alternative helps the public focus its comments during review of the NEPA document.

Programmatic documents—Broader scope EAs or EISs that describe the impacts of proposed policy changes, programs, or plans.

Proposal (1508.23)—The stage at which NPS has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal. The goal can be a project, plan, policy, program, and so forth. NEPA begins when the effects can be meaningfully evaluated.

Record of decision (ROD) (1505.2)—The document that is prepared to substantiate a decision based on an EIS. It includes a statement of the decision made, a detailed discussion of decision rationale, and the reasons for not adopting all mitigation measures analyzed, if applicable.

Scoping (1508.25)—Internal NPS decision-making on issues, alternatives, mitigation measures, the analysis boundary, appropriate level of documentation, lead and cooperating agency roles, available references and guidance, defining purpose and need, and so forth. External scoping is the early involvement of the interested and affected public.

Tiering (1508.28)—The use of broader, programmatic NEPA documents to discuss and analyze cumulative regional impacts and define policy direction, and the incorporation by reference of this material in subsequent narrower NEPA documents to avoid duplication and focus on issues "ripe for decision" in each case.

ACRONYMS

CE	Categorical exclusion
CEF	Categorical exclusion form
CEQ	President's Council on Environmental Quality
CX	Categorical exclusion
DEC	Division Environmental Comment request issued by NPS Environmental Quality Division-WASO
DM	Departmental manual
DOI	Department of the Interior
EA	Environmental assessment
ECM	Environmental compliance memorandum
EIS	Environmental impact statement
EO	Executive order
EPA	Environmental Protection Agency
ER	Environmental Review issued by the Department of the Interior
ERM	Environmental review memorandum
ESA	Endangered Species Act
ESM	Environmental statement memorandum
ESF	Environmental screening form
EQD	Environmental Quality Division
FONSI	Finding of no significant impact
GGNRA	Golden Gate National Recreation Area
GMP	General management plan
IDT	Interdisciplinary team
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service (New name is NOAA Fisheries)
NOA	Notice of availability
NOI	Notice of intent
NPS	National Park Service
PORE	Point Reyes National Seashore
REO	Regional environmental officer
ROD	Record of decision
SSO	System support office

WASO Washington, D.C., Office of the National Park Service

FIRE TERMS AND DEFINITIONS

AFFIRMS. (Administrative and Forest Fire Information Retrieval and Management System): A user-oriented interactive computer program which permits entry of fire weather observations and fire weather forecasts and which computes danger indices.

Backing fire. A prescribed fire or wildfire burning into or against the wind or down the slope without the aid of wind.

BEHAVE. A refinement of the Fire Behavior Prediction System that allows development of customized fuel models that can access the Rothermel fire spread equation (Burgan and Rothermel 1984).

Blackline. Preburning of fuels, either adjacent to a control line before igniting a prescribed fire or along a roadway or boundary as a deterrent to human-caused fires. Blacklining is usually done in heavy fuels adjacent to a control line during periods of low fire danger to reduce pressure on holding forces; blackline denotes a condition in which there is no unburned fine fuel remaining.

Burning index (BI). A relative number related to the contribution that fire behavior makes to the amount of effort needed to contain a fire in a specified fuel type. Doubling the BI indicates twice the effort will be required to contain a fire in that fuel type as was previously required providing all other parameters are held constant.

Cold trail. Method of controlling a partly-dead fire edge by careful inspection and feeling with the hand to detect any fire and extinguishing it by digging out every live spot and trenching any live edge.

Complex fire management program. A program involving prescribed burning, in addition to wildland fire suppression.

Density. The number of individuals, usually by species, per unit area.

Fire behavior. The response of fire to its environment of fuel, weather, and terrain including its ignition, spread, and development.

Fire effects. Physical, biological, and ecological impacts of fire on the environment.

Fire effects monitoring. A process that allows managers to evaluate whether environmental goals and objectives are being achieved and to adjust prescriptions to achieve a desired range of effects on the biotic and physical environment. Fire effects monitoring does not necessarily prove cause-and-effect associations. However, such monitoring will indicate if specific prescribed burn objectives were met and help management assess long-term change in these fire management areas.

Fire hazard. A fuel complex, defined by volume, type condition, arrangement, and location, that determines the degree of ease of ignition and of resistance to control.

Fire intensity. A general term relating to the heat energy released in a fire.

Fire resistance. A botanical adaptation that results in a lower probability of being injured or killed by fire. (e.g., thick platy or corky bark, or buds protected by long needles).

Fire return interval. Length of time necessary for an area equal to the entire area of interest to burn; size of the area of interest must be clearly specified.

Fire monitoring. The systematic process of collecting and recording fire-related data, particularly with regards to fuels, topography, weather, fire behavior, fire effects, smoke, and fire location.

Fire weather. Weather conditions which influence fire ignition, behavior, and suppression.

Fireline. Generally, any cleared or treated strip used to control a fire's spread; more specifically, that portion of a control line from which flammable materials have been removed by scraping or digging to mineral soil.

Flame height. The average maximum vertical extension of flames at the leading edge of the fire front. Occasional flashes that rise above the general level of flames are not considered. This distance is less than the flame length if flames are tilted due to wind or slope.

Flame length. The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface); an indicator of fire intensity.

Flammability. The relative ease with which a substance ignites and sustains combustion.

Fuel. The materials which are burned in a fire: duff litter, grass dead branch wood, snags, logs, stumps, weeds, brush, foliage, and to a limited degree, green trees.

Fuel break. Generally wide (10-1000 feet) strips of land on which native vegetation has been permanently modified so that fires burning into them can be more readily controlled. Some fuelbreaks contain firelines (e.g., roads, handlines) which can be quickly widened with hand tools or by burning out.

Fuel loading. Amount of dead fuel present on a particular site a given time; the percentage of fuel available for combustion changes with the season.

Fuel model. Simulated fuel complex for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified.

Hazardous fuels. Fuels that, if ignited, could threaten park developments, human life and safety, natural resources, or carry fire across park boundaries.

Head fire. A fire front spreading or ignited to spread with the gradient (downwind or upslope).

Human-caused fire. Any fire caused directly of indirectly by person(s).

Mean Fire Interval. Arithmetic average of all fire intervals determined, in years in a designated area during a specified time period; size of the area and the time period must be specified.

NFDRS. (National Fire Danger Rating System) Multiple index scheme designed to provide fire suppression and land management personnel with a systematic means of assessing various aspects of fire danger on a day-to-day basis.

NIFQS. (National Interagency Fire Qualification System) Fire management qualifications systems which describes for a particular large fire suppression organization the acceptable standards for experience, training, and physical fitness required for principal jobs within the system. NIFQS, when coupled with a large fire suppression organization, provides a complete system for fire management.

NIIMS. (National Interagency Incident Management System) Common command system designed to be used by any agency as a day-to-day operational procedure which can be expanded in scope to provide management for major single or multi-jurisdictional emergencies.

Natural fire. Any fire of natural origin (e.g., lightning, spontaneous combustion, volcanic activity).

Prescribed burning. The deliberate ignition of a fire in accordance with an established management plan to accomplish specific objectives under given prescriptions for weather and fuel conditions.

Prescribed fire. The skillful application of fire to natural fuels under conditions of weather, fuel moisture, soil moisture, etc., that will allow confinement of the fire to a predetermined area and at the same time will produce the intensity of heat and rate of spread required to meet certain overall objectives in the areas of silviculture, wildlife management, grazing, hazard fuel reduction, etc. The overall objective of prescribed fire is to employ fire scientifically to realize maximum net benefits with minimum damage and acceptable cost.

Presuppression. Activities undertaken in advance of fire occurrence to help ensure more effective fire suppression; includes over-all planning, recruitment and training of fire personnel, procurement and maintenance of firefighting equipment and supplies, fuel treatment, and creating, maintaining, and improving a system of fuelbreaks, roads, water sources, and control lines.

Prevention. All activities concerned with minimizing the incidence of wildfires.

Rate of spread. Relative activity of a fire in extending its horizontal dimensions, expressed as rate of increase of the perimeter, rate of increase in area, or rate of advance of its head, depending on the intended use of the information; generally in chains or acres per hour for a specific period in the fire's history.

Rehabilitation. The activities necessary to repair damage or disturbance caused by wildfire or the fire suppression activity.

Smoke Management. Application of knowledge of fire behavior and meteorological processes to minimize degradation of air quality during prescribed fires.

Smokechaser. Person whose principal function is fire suppression.

Suppression. All actions intended to extinguish or limit the growth of fires, regardless of the strategies and tactics chosen.

Timelag. Time necessary, under specified conditions, for a fuel particle to lose approximately 63% of the difference between its initial moisture content and its equilibrium moisture content. Providing conditions remain unchanged, a fuel will reach 95% of its equilibrium moisture content after 4 timelag periods.

Urban/Wildland Interface. Line, area, or zone where structures and other human development meets or intermingles with undeveloped wildland or vegetation fuels.

WIMS. (Weather Information Management System). This new computerized system will replace the current AFFIRMS program in 1992.

Wet line. A line of water, or water and chemical retardant, sprayed along the ground, and which serves as a temporary control line from which to ignite or stop a low-intensity fire.

Wildfire. Any fire occurring on wildland that is not meeting management objectives and thus requires a suppression response.

Appendix B: List of Classified Structures

List of Classified Structures in Project Area

	Struct. #	LCS #	Structure Name	NR Status	Significance Level	Cond.	Park
1	BO1940	9234	Olema Lime Kilns	Entered - Documented	State	Good	PORE
2	BO1945	56471	Randall Ranch Olema-Bolinas Road	Undetermined	Not Evaluated	Fair	PORE
3	BO1950	56415	Hagmaier Ranch Main Residence	Determined Eligible - SHPO	State	Good	PORE
4	BO1951	56416	Hagmaier Ranch Manager's House	Determined Eligible - SHPO	State	Good	PORE
5	BO1952	56417	Hagmaier Ranch Old Milking Barn	Determined Eligible - SHPO	State	Good	PORE
6	BO1953	56418	Hagmaier Ranch North Shed	Determined Eligible - SHPO	State	Fair	PORE
7	BO1954	56419	Hagmaier Ranch South Shed	Determined Eligible - SHPO	State	Fair	PORE
8	BO1980	9264	Teixeira Ranch Main House	Determined Eligible - SHPO	State	Good	PORE
9	BO1981	9265	Teixeira Ranch Grade A Dairy	Undetermined	Local	Good	PORE
10	BO1982	9266	Teixeira Ranch Original Milking Barn	Determined Eligible - SHPO	Local	Fair	PORE
11	BO1983	22725	Teixeira Ranch Horse Barn	Undetermined	Local	Fair	PORE
12	BO1984	22727	Teixeira Ranch Foot Bridge	Undetermined	Local	Poor	PORE
13	BO1985	22728	Teixeira Ranch Bridge	Undetermined	Local	Good	PORE
14	BO1986	22729	Teixeira Ranch Garage/Shed	Undetermined	Not Evaluated	Fair	PORE
15	BO1987	22730	Teixeira Ranch Fuel Storage Shed	Undetermined	Not Evaluated	Fair	PORE
16	BO1988	22711	Teixeira Ranch Stock Shed	Undetermined	Not Evaluated	Fair	PORE
17	BO1989	56412	Teixeira Ranch Water Tank	Undetermined	Not Evaluated	Fair	PORE
18	BO1990	56413	Teixeira Ranch Small Shed	Undetermined	Not Evaluated	Fair	PORE
19	BO1991	56414	Teixeira Ranch Wood Shed	Undetermined	Not Evaluated	Poor	PORE
20	BO2040	56475	Marconi Station Transmitter Building	Undetermined	Not Evaluated	Fair	PORE
21	BO2041	56476	Marconi Station Hotel	Undetermined	Not Evaluated	Good	PORE
22	BO2042	56477	Marconi Station Cottage #1	Undetermined	Not Evaluated	Good	PORE
23	BO2043	56478	Marconi Station Cottage #2	Undetermined	Not Evaluated	Good	PORE
24	BO2044	56479	Marconi Station Tennis Court	Undetermined	Not Evaluated	Fair	PORE
25	BO2045	56480	Marconi Station Radio Tower Bases	Undetermined	Not Evaluated	Fair	PORE
26	BO2050	56481	RCA Station Transmitter Building	Undetermined	Not Evaluated	Good	PORE
27	BO2051	56482	RCA Station Service Station	Undetermined	Not Evaluated	Poor	PORE
28	BO2052	56483	RCA Station Power House	Undetermined	Not Evaluated	Fair	PORE
29	BO2053	56484	RCA Station Cooling Tower	Undetermined	Not Evaluated	Fair	PORE
30	BO2070	56474	Ingermann Ranch House	Determined Eligible - SHPO	State	Fair	PORE
31	BV1600	56405	W Ranch Milking Barn	Determined Eligible - SHPO	State	Good	PORE
32	BV1700	56406	W Ranch John Rapp House	Determined Eligible - SHPO	State	Good	PORE

	Struct. #	LCS #	Structure Name	NR Status	Significance Level	Cond.	Park
33	BV1740	56423	Bear Valley Dedication Plaque	Ineligible - Managed as Resource	Not Significant	Good	PORE
34	BV1741	56424	Bear Valley Phillip Burton Wilderness Plaque	Ineligible - Managed as Resource	Not Significant	Good	PORE
35	BV1742	56485	Morgan Horse Ranch Dedication Plaque	Ineligible - Managed as Resource	Not Significant	Fair	PORE
36	BV1750	57556	Kule Loklo	Ineligible - Managed as Resource	Not Significant	Fair	PORE
37	BV1751	56408	W Ranch Z Ranch Road	Determined Eligible - SHPO	State	Fair	PORE
38	BV1752	56409	W Ranch Old Pine Trail	Determined Eligible - SHPO	State	Fair	PORE
39	BV1815	56411	Z Ranch Water System	Determined Eligible - SHPO	State	Fair	PORE
40	BV1845	56433	Glen Ranch Road	Determined Eligible - SHPO	State	Fair	PORE
41	BV1865	56434	Wildcat Ranch Road	Determined Eligible - SHPO	State	Good	PORE
42	BV1890	56425	Bear Valley Clem Miller Grave	Ineligible - Managed as Resource	Not Significant	Good	PORE
43	HE0012	9227	Point Reyes Light Station Stairway and Winch	Entered - Documented	Contributing	Good	PORE
44	HE0013	56300	Point Reyes Light Station East Rainshed	Entered - Undocumented	Contributing	Poor	PORE
45	HE0014	16043	Point Reyes Light Station West Rainshed & Cistern	Entered - Documented	Contributing	Fair	PORE
46	HE0015	56301	Point Reyes Light Station Oil House	Entered - Documented	Contributing	Good	PORE
47	HE0016	9228	Point Reyes Light Station Fog Signal Equipment Bld	Entered - Documented	Contributing	Good	PORE
48	HE0017	9229	Point Reyes Light Station Keeper's Garage	Entered - Documented	Contributing	Good	PORE
49	HE0018	56302	Point Reyes Light Station East Water Tank	Entered - Undocumented	Contributing	Good	PORE
50	HE0020	56303	Point Reyes Light Station Weather Bureau Building	Entered - Undocumented	Contributing	Fair	PORE
51	HE0021	9231	Point Reyes Light Station Fuel and Paint Storage	Entered - Documented	Contributing	Fair	PORE
52	HE0022	9232	Point Reyes Light Station Pumphouse	Entered - Documented	Contributing	Fair	PORE
53	HE0023	56304	Point Reyes Light Station Trail to Old Fog Signal	Entered - Undocumented	Contributing	Poor	PORE
54	HE0024	56305	Point Reyes Light Station Fog Signal Building Ruin	Entered - Undocumented	Contributing	Poor	PORE
55	HE0025	9233	Point Reyes Light Station Lighthouse	Entered - Documented	State	Good	PORE

	Struct. #	LCS #	Structure Name	NR Status	Significance Level	Cond.	Park
56	HE0026	56306	Point Reyes Light Station Laundry Bldg Foundation	Entered - Undocumented	Contributing	Poor	PORE
57	HE0027	56307	Point Reyes Light Station Road to Gov't Landing	Determined Eligible - SHPO	State	Good	PORE
58	HE0028	56308	Point Reyes Light Station Scr 682 No. 1 Radar Site	Undetermined	Not Evaluated	Fair	PORE
59	HE0029	56309	Point Reyes Light Station Cart House Platform	Entered - Undocumented	Contributing	Fair	PORE
60	HE0030	56310	Point Reyes Light Station National Register Plaque	Ineligible - Managed as Resource	Not Significant	Good	PORE
61	HE0031	56299	Point Reyes Light Station Granite Survey Monument	Entered - Undocumented	Contributing	Good	PORE
62	HE0115	9240	Point Reyes Lifeboat Station Officer-In-Charge Res	Entered - Documented	Contributing	Good	PORE
63	HE0116	16044	Point Reyes Lifeboat Station Water Storage Tank #1	Entered - Documented	Contributing	Fair	PORE
64	HE0117	16045	Point Reyes Lifeboat Station Water Storage Tank #2	Entered - Documented	Contributing	Poor	PORE
65	HE0118	9235	Point Reyes Lifeboat Station One-Car Garage	Entered - Documented	Contributing	Fair	PORE
66	HE0119	9236	Point Reyes Lifeboat Station Pumphouse	Entered - Documented	Contributing	Good	PORE
67	HE0120	16046	Point Reyes Lifeboat Station Stone Faced Wall	Entered - Documented	Contributing	Good	PORE
68	HE0121	16047	Point Reyes Lifeboat Station Water Storage Tank #3	Entered - Documented	Contributing	Good	PORE
69	HE0122	16048	Point Reyes Lifeboat Station Water Storage Tank #4	Entered - Documented	Contributing	Good	PORE
70	HE0123	9237	Point Reyes Lifeboat Station Fire Pumphouse	Entered - Documented	Contributing	Good	PORE
71	HE0124	16049	Point Reyes Lifeboat Station Low Rock Wall	Entered - Documented	Contributing	Fair	PORE
72	HE0125	9238	Point Reyes Lifeboat Station Boathouse	Entered - Documented	National	Good	PORE
73	HE0126	9239	Point Reyes Lifeboat Station Three Stall Garage	Entered - Documented	Contributing	Good	PORE
74	HE0127	56311	Point Reyes Lifeboat Station Road	Entered - Undocumented	Contributing	Good	PORE
75	HE0128	56312	Point Reyes Lifeboat Station Fuel Tanks	Entered - Undocumented	Contributing	Fair	PORE
76	HE0129	56313	Point Reyes Lifeboat Station Concrete Walks	Entered - Undocumented	Contributing	Fair	PORE
77	HE0130	56314	Point Reyes Lifeboat Station Drake Plaque	Ineligible - Managed as Resource	Not Significant	Good	PORE
78	HE0131	56315	Point Reyes Lifeboat Station NHL Plaque	Ineligible - Managed as Resource	Not Significant	Good	PORE
79	HE0132	55741	36-foot Motor Lifeboat No. 36542	Entered - Documented	Contributing	Good	PORE

	Struct. #	LCS #	Structure Name	NR Status	Significance Level	Cond.	Park
80	HE0133	22267	Point Reyes Lifeboat Station Marine Railway	Entered - Documented	National	Poor	PORE
81	LI1519	56426	Clem Miller Environmental Education Center Plaque	Ineligible - Managed as Resource	Not Significant	Good	PORE
82	LI1535	56432	Point Reyes Old Coast Road	Determined Eligible - SHPO	State	Fair	PORE
83	PA0215	56331	A Ranch Calf Shed	Determined Eligible - SHPO	State	Fair	PORE
84	PA0216	56332	A Ranch Gates, Fences, Corrals	Determined Eligible - SHPO	State	Fair	PORE
85	PA0250	56333	B Ranch Old House	Determined Eligible - SHPO	State	Fair	PORE
86	PA0251	56334	B Ranch Creamery	Determined Eligible - SHPO	State	Poor	PORE
87	PA0252	56335	B Ranch Horse Barn	Determined Eligible - SHPO	State	Fair	PORE
88	PA0253	56336	B Ranch Old Milking Barn	Determined Eligible - SHPO	State	Fair	PORE
89	PA0254	56337	B Ranch Grade A Barn	Undetermined	Not Evaluated	Fair	PORE
90	PA0255	56338	B Ranch Shed 1	Determined Eligible - SHPO	State	Fair	PORE
91	PA0256	56339	B Ranch Shed 2	Determined Eligible - SHPO	State	Fair	PORE
92	PA0257	56340	B Ranch Shed 3	Determined Eligible - SHPO	State	Fair	PORE
93	PA0270	56341	B Ranch Gates, Corrals, Fences	Determined Eligible - SHPO	State	Fair	PORE
94	PA0320	22268	C Ranch Main House	Determined Eligible - SHPO	State	Good	PORE
95	PA0321	22269	C Ranch Old Milking Barn	Determined Eligible - SHPO	State	Fair	PORE
96	PA0322	22270	C Ranch Chicken House	Determined Eligible - SHPO	State	Poor	PORE
97	PA0323	56342	C Ranch Garage/Shed	Determined Eligible - SHPO	State	Fair	PORE
98	PA0324	56344	C Ranch Bunk House	Determined Eligible - SHPO	State	Poor	PORE
99	PA0329	56343	C Ranch Gates, Corrals, Fences	Determined Eligible - SHPO	State	Fair	PORE
100	PA0390	56345	D Ranch Old Ranch House	Determined Eligible - SHPO	State	Fair	PORE
101	PA0391	56346	D Ranch Old Creamery	Determined Eligible - SHPO	State	Poor	PORE
102	PA0392	56347	D Ranch Horse Barn	Determined Eligible - SHPO	State	Fair	PORE
103	PA0393	56348	D Ranch Old Milking Barn	Determined Eligible - SHPO	State	Fair	PORE
104	PA0394	56349	D Ranch Bunk House	Determined Eligible - SHPO	State	Fair	PORE
105	PA0395	56350	D Ranch Shed	Determined Eligible - SHPO	State	Fair	PORE

	Struct. #	LCS #	Structure Name	NR Status	Significance Level	Cond.	Park
106	PA0396	56351	D Ranch Old Garage	Determined Eligible - SHPO	State	Fair	PORE
107	PA0397	56352	D Ranch Grade A Milking Barn	Determined Eligible - SHPO	State	Good	PORE
108	PA0400	56354	D Ranch Fences, Corrals, Gates	Determined Eligible - SHPO	State	Fair	PORE
109	PA0460	56420	Drakes Beach 1946 Drake Monument	Ineligible - Managed as Resource	Not Significant	Good	PORE
110	PA0461	56421	Drakes Beach Drake Navigators Guild Monument	Ineligible - Managed as Resource	Not Significant	Fair	PORE
111	PA0462	56422	Drakes Beach Nova Albion Plaque	Ineligible - Managed as Resource	Not Significant	Good	PORE
112	PA0490	56356	E Ranch Old Milking Barn	Determined Eligible - SHPO	State	Fair	PORE
113	PA0498	56358	E Ranch Road	Determined Eligible - SHPO	State	Fair	PORE
114	PA0499	56359	E Ranch Fences, Gates, Corrals	Determined Eligible - SHPO	State	Fair	PORE
115	PA0530	56361	F Ranch Schooner Landing (Ruin)	Determined Eligible - SHPO	State	Poor	PORE
116	PA0531	56362	F Ranch Schooner Landing Road	Determined Eligible - SHPO	State	Poor	PORE
117	PA0600	56365	G Ranch Cemetery Hinrik Claussen Grave	Ineligible - Managed as Resource	Not Significant	Good	PORE
118	PA0601	56366	G Ranch Cemetery Agneta Claussen Grave	Ineligible - Managed as Resource	Not Significant	Fair	PORE
119	PA0602	56367	G Ranch Cemetery Christiane Claussen Grave	Ineligible - Managed as Resource	Not Significant	Fair	PORE
120	PA0603	56368	G Ranch Cemetery Capt. Peter Henry Claussen Grave	Ineligible - Managed as Resource	Not Significant	Fair	PORE
121	PA0604	56369	G Ranch Cemetery Claussen Graveyard Fence	Ineligible - Managed as Resource	Not Significant	Good	PORE
122	PA0605	56370	Life-Saving Service Cemetery Fred Carstens Grave	Ineligible - Managed as Resource	Not Significant	Fair	PORE
123	PA0606	56371	Life-Saving Service Cemetery John Korpala Grave	Ineligible - Managed as Resource	Not Significant	Fair	PORE
124	PA0607	56372	Life-Saving Service Cemetery Andrew Anderson Grave	Ineligible - Managed as Resource	Not Significant	Fair	PORE
125	PA0608	56373	Life-Saving Service Cemetery George Larson Grave	Ineligible - Managed as Resource	Not Significant	Poor	PORE

	Struct. #	LCS #	Structure Name	NR Status	Significance Level	Cond.	Park
126	PA0609	56374	Life-Saving Service Cemetery Unidentified Grave	Ineligible - Managed as Resource	Not Significant	Poor	PORE
127	PA0610	56375	Life-Saving Service Cemetery Fence	Ineligible - Managed as Resource	Not Significant	Fair	PORE
128	PA0690	9267	Home Ranch Main House	Determined Eligible - SHPO	State	Good	PORE
129	PA0691	9268	Home Ranch Milking Barn	Determined Eligible - SHPO	State	Fair	PORE
130	PA0693	9270	Home Ranch Hog and Hen House	Determined Eligible - SHPO	State	Fair	PORE
131	PA0694	9271	Home Ranch Wood Shed	Determined Eligible - SHPO	State	Good	PORE
132	PA0695	9272	Home Ranch Lee Murphy Residence	Undetermined	Not Evaluated	Good	PORE
133	PA0696	9273	Home Ranch Machine Shop	Determined Eligible - SHPO	State	Fair	PORE
134	PA0697	9274	Home Ranch Old Dairy House	Determined Eligible - SHPO	State	Poor	PORE
135	PA0698	9278	Home Ranch Dog Shed/Storage	Undetermined	Not Evaluated	Fair	PORE
136	PA0699	9279	Home Ranch Garage	Undetermined	Not Evaluated	Fair	PORE
137	PA0700	9280	Home Ranch Pumphouse	Undetermined	Not Evaluated	Fair	PORE
138	PA0701	9281	Home Ranch Granary/Shed	Determined Eligible - SHPO	State	Poor	PORE
139	PA0702	9282	Home Ranch Horse Barn	Determined Eligible - SHPO	State	Fair	PORE
140	PA0703	56427	Home Ranch Gates, Corrals, Fences	Undetermined	State	Fair	PORE
141	PA0720	56428	Home Ranch Old Point Reyes Road	Determined Eligible - SHPO	State	Fair	PORE
142	PA0721	56429	Home Ranch Glenbrook/New Albion Road	Determined Eligible - SHPO	State	Fair	PORE
143	PP0850	56400	M Ranch Horse Barn	Determined Eligible - SHPO	State	Fair	PORE
144	PP0851	56401	M Ranch Old Milking Barn	Determined Eligible - SHPO	State	Fair	PORE
145	PP0855	56402	M Ranch Gates, Corrals, Fences	Determined Eligible - SHPO	State	Fair	PORE
146	PP0856	56403	M Ranch Road	Determined Eligible - SHPO	State	Fair	PORE
147	PP0940	56390	L Ranch House	Determined Eligible - SHPO	State	Good	PORE
148	PP0941	56391	L Ranch Dairy House	Determined Eligible - SHPO	State	Fair	PORE
149	PP0942	56392	L Ranch Horse Barn	Determined Eligible - SHPO	State	Fair	PORE
150	PP0943	56393	L Ranch Calf Barn	Determined Eligible - SHPO	State	Fair	PORE
151	PP0944	56394	L Ranch Milking Barn	Determined Eligible - SHPO	State	Fair	PORE

	Struct. #	LCS #	Structure Name	NR Status	Significance Level	Cond.	Park
152	PP0945	56395	L Ranch Shed	Determined Eligible - SHPO	State	Poor	PORE
153	PP0946	56396	L Ranch Garage	Determined Eligible - SHPO	State	Fair	PORE
154	PP0947	56397	L Ranch East Barn	Undetermined	Not Evaluated	Fair	PORE
155	PP0955	56398	L Ranch Gates, Corrals, Fences	Determined Eligible - SHPO	State	Fair	PORE
156	PP0956	56399	L Ranch Road to Sacramento Landing	Determined Eligible - SHPO	State	Fair	PORE
157	PP1090	56389	Old Pierce Point Road	Determined Eligible - SHPO	State	Fair	PORE
158	PP1100	56387	Lairds Landing House	Determined Eligible - SHPO	State	Fair	PORE
159	PP1101	56388	Lairds Landing Shed	Determined Eligible - SHPO	State	Fair	PORE
160	PP1102	56386	Lairds Landing Road	Undetermined	Not Evaluated	Fair	PORE
161	PP1120	56379	I Ranch Old Milking Barn	Determined Eligible - SHPO	State	Good	PORE
162	PP1121	56380	I Ranch Creamery	Determined Eligible - SHPO	State	Good	PORE
163	PP1122	56381	I Ranch Main Residence	Determined Eligible - SHPO	State	Good	PORE
164	PP1123	56382	I Ranch Feed Shed	Determined Eligible - SHPO	State	Good	PORE
165	PP1134	56383	I Ranch Gates, Fences, Corrals	Determined Eligible - SHPO	State	Fair	PORE
166	PP1135	56384	I Ranch Road	Determined Eligible - SHPO	State	Fair	PORE
167	PP1220	9241	Pierce Ranch Main House	Entered - Documented	State	Good	PORE
168	PP1221	9242	Pierce Ranch Tank House	Entered - Documented	State	Good	PORE
169	PP1222	9243	Pierce Ranch Wash House	Entered - Documented	State	Good	PORE
170	PP1223	9244	Pierce Ranch School House	Entered - Documented	State	Good	PORE
171	PP1224	20000	Pierce Ranch School Outhouse	Entered - Documented	State	Good	PORE
172	PP1225	9245	Pierce Ranch Carriage Shed	Entered - Documented	State	Good	PORE
173	PP1226	9246	Pierce Ranch Carpenter Shop	Entered - Documented	State	Good	PORE
174	PP1227	9247	Pierce Ranch Blacksmith Shop	Entered - Documented	State	Good	PORE
175	PP1228	9248	Pierce Ranch McClure Calf Shed	Entered - Documented	State	Good	PORE
176	PP1229	9249	Pierce Ranch Hay Barn	Entered - Documented	State	Good	PORE
177	PP1230	9250	Pierce Ranch New Dairy House	Entered - Documented	State	Good	PORE
178	PP1231	9251	Pierce Ranch Horse Barn	Entered - Documented	State	Good	PORE

	Struct. #	LCS #	Structure Name	NR Status	Significance Level	Cond.	Park
179	PP1232	9252	Pierce Ranch Old Garage	Entered - Documented	State	Good	PORE
180	PP1233	9253	Pierce Ranch Old Wagon Shed	Entered - Documented	State	Good	PORE
181	PP1234	9254	Pierce Ranch Chicken House "A"	Entered - Documented	State	Good	PORE
182	PP1235	9255	Pierce Ranch Chicken House "B"	Entered - Documented	State	Good	PORE
183	PP1236	9256	Pierce Ranch Old Dairy House	Entered - Documented	State	Fair	PORE
184	PP1238	9257	Pierce Ranch Corrals and Fences	Entered - Documented	State	Fair	PORE
185	PP1239	9258	Pierce Ranch Cistern	Entered - Documented	State	Good	PORE
186	PP1240	56320	Pierce Ranch Lath House	Entered - Documented	State	Good	PORE
187	PP1241	56321	Pierce Ranch Road to White Gulch Landing	Entered - Documented	State	Fair	PORE
188	PP1242	56322	Pierce Ranch Road to Lower Pierce Ranch	Entered - Documented	State	Fair	PORE
189	PP1243	56323	Pierce Ranch Entrance Road	Entered - Documented	State	Good	PORE
190	PP1244	56324	Pierce Ranch Cattle Guard	Entered - Documented	State	Fair	PORE
191	PP1245	56325	Pierce Ranch Ruins of Schooner Landing	Determined Eligible - SHPO	State	Poor	PORE
192	PP1246	56326	Pierce Ranch Ruins of Quail Clubhouse	Determined Eligible - SHPO	State	Fair	PORE
193	PP1247	56327	Pierce Ranch Hog Shed Ruins	Determined Eligible - SHPO	State	Fair	PORE
194	PP1248	56328	Pierce Ranch Feed Storage House	Entered - Undocumented	State	Fair	PORE
195	PP1249	56319	Pierce Ranch Rock Wall Remains	Entered - Undocumented	State	Fair	PORE
196	PP1250	56318	Pierce Ranch National Register Plaque	Ineligible - Managed as Resource	Not Significant	Good	PORE
197	OV0101	10160	Wilkins Ranch Main House	Determined Eligible - SHPO	Local	Good	GOGA
198	OV0102	22277	Wilkins Ranch Granary	Determined Eligible - SHPO	Local	Fair	GOGA
199	OV0104	10163	Wilkins Ranch Creamery	Determined Eligible - SHPO	Local	Fair	GOGA
200	OV0105	10164	Wilkins Ranch Main Barn	Determined Eligible - SHPO	Local	Fair	GOGA
201	OV0106	10162	Wilkins Ranch Shed/Garage	Determined Eligible - SHPO	Local	Fair	GOGA
202	OV0107	10161	Wilkins Ranch Horse Barn	Determined Eligible - SHPO	Local	Fair	GOGA
203	OV0109	22278	Wilkins Ranch Bull House	Undetermined	Not Evaluated	Fair	GOGA
204	OV0111	22279	Wilkins Ranch Well House	Undetermined	Not Evaluated	Fair	GOGA

	Struct. #	LCS #	Structure Name	NR Status	Significance Level	Cond.	Park
205	OV0112	56444	Wilkins Ranch Fences, Gates, Corrals	Determined Eligible - SHPO	Local	Fair	GOGA
206	OV0113	56445	Wilkins Ranch Roads	Determined Eligible - SHPO	Local	Fair	GOGA
207	OV0501	10165	Randall Ranch Sarah Seaver Randall House	Determined Eligible - Keeper	Local	Fair	GOGA
208	OV0601	10167	Giacomini Ranch House	Determined Eligible - SHPO	Local	Good	GOGA
209	OV0602	22271	Giacomini Ranch Carriage House	Determined Eligible - SHPO	Local	Fair	GOGA
210	OV0603	22272	Giacomini Ranch Grade A Dairy	Determined Eligible - SHPO	Local	Fair	GOGA
211	OV0606	10169	Giacomini Ranch Horse Barn	Determined Eligible - SHPO	Local	Poor	GOGA
212	OV0607	10170	Giacomini Ranch Barn	Determined Eligible - SHPO	Local	Fair	GOGA
213	OV0608	10171	Giacomini Ranch Creamery	Determined Eligible - SHPO	Local	Fair	GOGA
214	OV0611	10172	Giacomini Ranch Wood Shed	Determined Eligible - SHPO	Local	Fair	GOGA
215	OV0612	56469	Giacomini Ranch Water Tank	Undetermined	Not Evaluated	Fair	GOGA
216	OV0613	56470	Giacomini Ranch Gates, Fences, Corrals	Determined Eligible - SHPO	Local	Fair	GOGA
217	OV0907	56468	Parsons Ranch Gates, Corrals, Fences	Determined Eligible - SHPO	Local	Fair	GOGA
218	OV0908	56446	Parsons Ranch Roads	Determined Eligible - SHPO	Local	Good	GOGA
219	OV1001	10177	Five Brooks Pinkerton Residence	Undetermined	Not Evaluated	Good	GOGA
220	OV1002	56461	Five Brooks Pinkerton Large Shed	Undetermined	Not Evaluated	Fair	GOGA
221	OV1003	56462	Five Brooks Pinkerton Tractor Shed	Undetermined	Not Evaluated	Fair	GOGA
222	OV1004	56463	Five Brooks Pinkerton Outhouse	Undetermined	Not Evaluated	Fair	GOGA
223	OV1005	56464	Five Brooks Pinkerton Pumphouse	Undetermined	Not Evaluated	Fair	GOGA
224	OV1201	10178	Stewart Ranch Main House	Determined Eligible - SHPO	Local	Good	GOGA
225	OV1202	22712	Stewart Ranch Shed Storage	Determined Eligible - SHPO	Local	Fair	GOGA
226	OV1204	22714	Stewart Ranch Carriage House	Determined Eligible - SHPO	Local	Fair	GOGA
227	OV1205	22715	Stewart Ranch House No. 3 "Squatters House"	Determined Eligible - SHPO	Local	Fair	GOGA
228	OV1207	56465	Stewart Ranch Laundry	Determined Eligible - SHPO	Local	Fair	GOGA
229	OV1208	56466	Stewart Ranch Gates, Fences, Corrals	Determined Eligible - SHPO	Local	Fair	GOGA
230	OV1210	22716	Stewart Ranch House No. 1	Determined Eligible - SHPO	Local	Fair	GOGA

	Struct. #	LCS #	Structure Name	NR Status	Significance Level	Cond.	Park
231	OV1211	22717	Stewart Ranch Equipment Shed/Shop	Undetermined	Not Evaluated	Fair	GOGA
232	OV1212	10179	Stewart Ranch Old Barn	Determined Eligible - SHPO	Local	Good	GOGA
233	OV1213	22718	Stewart Ranch Silo	Undetermined	Not Evaluated	Fair	GOGA
234	OV1214	22719	Stewart Ranch Barn/Stables	Determined Eligible - SHPO	Local	Good	GOGA
235	OV1217	22720	Stewart Ranch Grade A Barn	Determined Eligible - SHPO	Local	Fair	GOGA
236	OV1219	22721	Stewart Ranch Open Front Shed	Determined Eligible - SHPO	Local	Fair	GOGA
237	OV1220	22722	Stewart Ranch Water Storage Tank	Undetermined	Not Evaluated	Fair	GOGA
238	OV1505	10159	Truttman Ranch Grade A Dairy Barn	Determined Eligible - SHPO	Local	Fair	GOGA
239	OV1512	22284	Truttman Ranch Grain Shed	Undetermined	Not Evaluated	Fair	GOGA
240	OV1516	10152	Truttman Ranch Bunk House	Determined Eligible - SHPO	Local	Fair	GOGA
241	OV1520	10156	Truttman Ranch Hay Barn	Determined Eligible - SHPO	Local	Poor	GOGA
242	OV1530	56430	Truttman Ranch Fences, Gates, Corral	Determined Eligible - SHPO	Local	Good	GOGA
243	OV1531	56431	Truttman Ranch Roads	Determined Eligible - SHPO	Local	Good	GOGA
244	OV1600	10150	Olema Valley East Copper Mine	Undetermined	Not Evaluated	Fair	GOGA
245	OV1601	57571	Olema Valley Copper Mine Ruins	Undetermined	Not Evaluated	Fair	GOGA
246	OV1602	57572	Olema Valley Copper Mine Road	Undetermined	Not Evaluated	Fair	GOGA
247	OV1700	10151	Olema Valley West Copper Mine	Undetermined	Not Evaluated	Fair	GOGA
248	OV3001	56435	McIsaac Ranch Main House	Undetermined	Not Evaluated	Fair	GOGA
249	OV3002	56436	McIsaac Ranch Shafter House	Undetermined	Not Evaluated	Fair	GOGA
250	OV3003	56437	McIsaac Ranch Barn	Undetermined	Not Evaluated	Fair	GOGA
251	OV3004	56438	McIsaac Ranch Calf Barn	Undetermined	Not Evaluated	Poor	GOGA
252	OV3005	56439	McIsaac Ranch Shelter Shed	Undetermined	Not Evaluated	Fair	GOGA
253	OV3006	56440	McIsaac Ranch Water Tank	Undetermined	Not Evaluated	Fair	GOGA
254	OV3007	56441	McIsaac Ranch Roads	Undetermined	Not Evaluated	Fair	GOGA
255	OV3008	56442	McIsaac Ranch Gates, Corrals, Fences	Undetermined	Not Evaluated	Fair	GOGA
256	OV3009	56443	McIsaac Ranch Tocaloma Bridge	Undetermined	Not Evaluated	Fair	GOGA
257	OV3101	56447	Zanardi Ranch Main House	Undetermined	Not Evaluated	Good	GOGA
258	OV3102	56448	Zanardi Ranch Creamery/Dwelling	Undetermined	Not Evaluated	Fair	GOGA
259	OV3103	56449	Zanardi Ranch Old Milking Barn	Undetermined	Not Evaluated	Fair	GOGA
260	OV3104	56450	Zanardi Ranch Horse Barn	Undetermined	Not Evaluated	Fair	GOGA
261	OV3105	56451	Zanardi Ranch Shed Garage	Undetermined	Not Evaluated	Fair	GOGA
262	OV3106	56452	Zanardi Ranch Cooler Shed	Undetermined	Not Evaluated	Good	GOGA

	Struct. #	LCS #	Structure Name	NR Status	Significance Level	Cond.	Park
263	OV3107	56453	Zanardi Ranch Shed next to Garage	Undetermined	Not Evaluated	Fair	GOGA
264	OV3108	56454	Zanardi Ranch Large Shed	Undetermined	Not Evaluated	Fair	GOGA
265	OV3109	56455	Zanardi Ranch Shed at Roadside	Undetermined	Not Evaluated	Fair	GOGA
266	OV3110	56456	Zanardi Ranch Old Shed in Yard	Undetermined	Not Evaluated	Fair	GOGA
267	OV3111	56457	Zanardi Ranch Small House	Undetermined	Not Evaluated	Fair	GOGA
268	OV3112	56458	Zanardi Ranch 1923 Shed	Undetermined	Not Evaluated	Fair	GOGA
269	OV3113	56459	Zanardi Ranch Water Tank	Undetermined	Not Evaluated	Fair	GOGA
270	OV3114	56460	Zanardi Ranch Gates, Corrals, Fences	Undetermined	Not Evaluated	Fair	GOGA
271	OV3200	56472	Lagunitas Creek/Tomales Bay Railroad Grade	Undetermined	Not Evaluated	Fair	GOGA
272	OV3300	56473	Old Olema Trail	Undetermined	Not Evaluated	Fair	GOGA
273	OV8001	57587	Rogers Ranch Old Milking Barn	Undetermined	Not Evaluated	Fair	GOGA
274	OV8002	57588	Rogers Ranch Old Dairy House	Undetermined	Not Evaluated	Poor	GOGA
275	OV8003	57589	Rogers Ranch Wagon Shed	Undetermined	Not Evaluated	Fair	GOGA
276	OV8004	57590	Rogers Ranch Garage/Shed	Undetermined	Not Evaluated	Good	GOGA
277	OV8005	57591	Rogers Ranch Fire Truck Shed	Undetermined	Not Evaluated	Fair	GOGA
278	OV8006	57592	Rogers Ranch Gates, Corrals, Fences	Undetermined	Not Evaluated	Good	GOGA
279	OV9001	57593	McFadden Ranch Hay Barn	Undetermined	Not Evaluated	Good	GOGA
280	OV9002	57594	McFadden Ranch Grade A Barn	Undetermined	Not Evaluated	Good	GOGA
281	OV9003	57595	McFadden Ranch Old Dairy	Undetermined	Not Evaluated	Fair	GOGA
282	OV9004	57596	McFadden Ranch Garage	Undetermined	Not Evaluated	Good	GOGA
283	OV9005	57597	McFadden Ranch Shed	Undetermined	Not Evaluated	Fair	GOGA
284	OV9006	57598	McFadden Ranch Road	Undetermined	Not Evaluated	Good	GOGA
285	OV9007	57599	McFadden Ranch Gates, Fences, Corrals	Undetermined	Not Evaluated	Good	GOGA
286	TB3503	57574	Hamlet Lacey Cabin	Determined Eligible - SHPO	Local	Poor	GOGA
287	TB3504	57579	Hamlet Outhouses	Determined Eligible - SHPO	Local	Poor	GOGA
288	TB3505	57575	Hamlet Bean Cabin	Determined Eligible - SHPO	Local	Poor	GOGA
289	TB3506	57576	Hamlet Boat Ways	Determined Eligible - SHPO	Local	Poor	GOGA
290	TB3507	57577	Hamlet Storage Shed	Determined Eligible - SHPO	Local	Poor	GOGA
291	TB3510	57578	Hamlet Jensen House	Determined Eligible - SHPO	Local	Poor	GOGA
292	TB3511	57580	Hamlet South Fisherman's Cabin	Determined Eligible - SHPO	Local	Poor	GOGA
293	TB3513	57581	Hamlet Middle Fisherman's Cabin	Determined Eligible - SHPO	Local	Poor	GOGA
294	TB3515	57582	Hamlet North Fisherman's Cabin	Determined Eligible - SHPO	Local	Poor	GOGA
295	TB3521	57585	Hamlet Water Tank House	Determined Eligible - SHPO	Local	Fair	GOGA

	Struct. #	LCS #	Structure Name	NR Status	Significance Level	Cond.	Park
296	TB3522	57586	Hamlet Old County Road	Determined Eligible - SHPO	Local	Fair	GOGA
297	TB3523	57573	Hamlet Remains of Railroad Grade	Determined Eligible - SHPO	Local	Fair	GOGA

Appendix C: Other Projects Considered in Cumulative Impacts Analysis

Projects Included in the Cumulative Analysis of the FMP

- The proposed McClure dairy barn and resource enhancement project, located in the North District of Point Reyes NS, involves construction of an 81,000 square foot loafing barn and development of manure holding ponds to enhance water quality. The project would enhance the viability of the ranch and exclusionary fencing will increase natural resource protection in the project area. One housing unit will be added to the complex.

- The Pacific Coast Learning Center has been initiated in existing buildings in Olema Valley at the former Hagmaier Ranch. The site is used for office space, housing, and fire fighting and maintenance equipment. No new construction has occurred and park and visitor use has occurred on the site for over 20 years.

- Sewage systems upgrades have been conducted at one residential unit on NPS lands and three new systems in residential units are planned for this fiscal year. The three units are all located in upper Olema Valley. The NPS headquarters buildings are receiving a new sewage system.

- Riparian protection projects in Olema Valley for coho salmon and steelhead restoration. These projects include riparian exclusionary fencing on Blueline Creek, Giacomini Creek, Cheda Creek, and other tributaries. The park should receive funding in FY05 for additional creek restoration in the Limantour Beach area.

- The Giacomini Ranch Wetlands Restoration Project planning is underway. The project involves restoring to wetlands approximately 560 acres of grazed land. The property was purchase in 2000. The wetlands restoration will be completed in FY07 or FY08 after public review and the completion of an EIS.

- Cultural resource preservation projects have been conducted in the Olema Valley within the last five years. The historic bunkhouse at Truttman Ranch, northern Olema Valley, has been reroofed and rehabilitated. The Giacomini Ranch house, in southern Olema Valley, and main barn have received preservation treatments to ensure long-term preservation. In 1997, the main barn at the Wilkins Ranch was stabilized. The main barn at Truttman will be stabilized in FY2001.

- The MCI building in the North District of Point Reyes National Seashore is receiving rehabilitation and will provide office space for district rangers. Ranger staff will be moved from existing office. Fire staff will also use the office space. No additional construction will occur.

- The Point Reyes Hostel has developed a proposal for upgrading housing, a new sewage system, and for providing additional overnight lodging. The proposal will increase lodging capability from 44-52 persons. Housing for staff will increase from 2 to 4 units.

- The Red Barn at park headquarters has been rehabilitated for curatorial storage and classroom space. There will also be office space for existing Marine Sanctuary staff.

- An average of 20 Wildland Urban Interface projects per year are being conducted in conjunction with FireSafe Marin, Marin County Fire Department, and other community organizations. These projects are primarily vegetation treatments along roadways for evacuation routes, creation of defensible space around homes, and fuel load reductions in strategic areas.

- The Point Reyes Lighthouse has been rehabilitated by repairing key structures such as the stairway and other site features. The Lighthouse is receiving a new water system and buildings are being repaired and painted.

- The Historic Lifeboat Station is scheduled in FY05 to receive approximately $1.0 million to restore the boat launching facility. The project involves the rehabilitation of pilings and railway rescue boat launching structures.

- The Vision Fire, a large wildlife that occurred in October of 1995 was started by an illegal campfire, and burned approximately 12,500 acres and destroyed roughly 45 structures on Inverness Ridge.

Appendix D: Biological Opinion United States Fish and Wildlife Service

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In reply refer to:
1-1-04-F-0181

May 28, 2004

Memorandum

To: Superintendent, Point Reyes National Seashore, National Park Service, Point Reyes Station, California

From: FOR Acting Field Supervisor, Sacramento Fish and Wildlife Office, Sacramento, California Chf Nagano

Subject: Formal Consultation on the Fire Management Plan, Point Reyes National Seashore and Golden Gate National Recreation Area in Marin County, California

This is in response to your April 1, 2004, request for formal consultation with the U.S. Fish and Wildlife Service (Service) on the Fire Management Plan at Point Reyes National Seashore and the Golden Gate National Recreation Area in Marin County, California. Your letter was received by this Field Office on April 5, 2004. This document represents the Service's review of the effects of the action on the endangered Myrtle's silverspot butterfly (*Speyeria zerene myrtleae*), endangered Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*), endangered Sonoma spineflower (*Chorizanthe valida*), endangered Tiburon paintbrush (*Castilleja affinis* ssp. *neglecta*), endangered beach layia (*Layia carnosa*), endangered Tidestrom's lupine (*Lupinus tidestromii*), threatened Marin dwarf flax (*Hesperolinon congestum*), endangered California freshwater shrimp (*Syncaris pacificus*), threatened California red-legged frog (*Rana aurora draytonii*), threatened Pacific Coast Population of the western snowy plover (*Chardrius alexandrinus nivosus*), threatened northern spotted owl (*Strix occidentalis caurina*), and proposed critical habitat for the California red-legged frog. This biological opinion is issued pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act).

The Service considers the protection of human life and safety to be of the utmost importance and highest priority; the Act contains provisions for conducting emergency actions that involve listed species (50 CFR § 402.05). We recommend the National Park Service review the Act and/or contact us for further details regarding these procedures.

This biological opinion is based on your April 1, 2004, letter, to the Service; *Draft Fire Management Plan Environmental Impact Statement Point Reyes National Seashore and North District of Golden Gate National Recreation Area* (DEIS) dated January 2004, that was prepared by the U. S. National Park Service; *Point Reyes National Seashore Threatened and Endangered Species Locations as of 2001*, undated, that was prepared by the National Park Service; a meeting between Robert Gerson and Chris Nagano of the Service, and you and your staff on March 3, 2004; a letter from the National Park Service to the Service dated April 28, 2004; and other information available to the Service.

The Service concurs with the determination by the National Park Service that the proposed project is not likely to adversely affect the Sonoma alopecurus, Sonoma spineflower, Tiburon paintbrush, beach layia, Tidestrom's lupine, Marin dwarf flax, California freshwater shrimp, and the Pacific Coast Population of the western snowy plover. This is because the proposed project will not be implemented in the areas or habitats utilized by these species, or because the specific measures described in the DEIS will result in the avoidance of adverse effects to these listed taxa.

The Service concurs with the determination that the proposed project is not likely to adversely affect the threatened northern spotted owl because of the avoidance measures that will be implemented by the National Park Service. The measures include the following:

1. National Park Service staff will annually identify and map areas where northern spotted owls are nesting.

2. To the greatest extent possible, National Park Service staff will protect occupied and previously used nest sites from unplanned ignitions.

3. Activities described in the Fire Management Plan, such as prescribed burning, mechanical treatment, debris chipping or other noise generating actions, will not occur within 0.40-kilometer (km)(0.25-mile) of a known occupied, or previously used northern spotted owl nest site between February 1 and July 31 (breeding season).

4. National Park Service staff will conduct post-treatment monitoring of owls to ascertain any impacts associated with the Fire management Plan.

5. Mechanical fuel reduction activities will not alter the percent cover of canopy overstory and will preserve a multi-layered structure according to the Fire Management Plan that states that 60% of the canopy cover will be preserved. Mechanical fuel reduction projects will be implemented to remove stands of flammable non-native tree and shrub species, and to strategically reduce overall fuel densities and ladder fuels in shaded fuel breaks. Mechanical fuel reduction activities may include cutting, chipping and burning of slash piles. Fuel reduction would be accomplished by removing a) non-native shrubs and trees (such as French broom, Scotch broom, Spanish broom, eucalyptus, black acacia, and green wattle acacia), b)

native shrubs with more flammable tendencies (such as coyote bush or chamise), and c) native trees greater than 25.4 centimeters (cm)(10 inches [in]) diameter at breast height only if the trees are dead or structurally unstable and within falling distance of homes, drives, roads or trails or other public use areas.

6. Fuel reduction actions to construct shaded fuel breaks will selectively remove vegetation to achieve a strategically sited, linear zone of reduced fuels. Multi-layered structure would be reduced but only within the width of the shaded fuel break and only to a height of 1.83 to 2.44 meters (m)(6 to 8 feet [ft]). Trees will be limbed up to 1.93 to 2.44 m (6 to 8 ft) from the ground to reduce overall ladder fuels and the potential for a ground fire to spread into the tree canopy. Typically a linear fuel break feature can range from 9.15 to 61 m (30 to 200 ft) wide and usually buffers a fire road, an interface with development, expands upon an area with existing low fuels, or other strategic feature that presents an opportunity to slow the spread of a fire.

The Service does not concur that the proposed project will result in effects to the threatened California red-legged frog, proposed critical habitat for the California red-legged frog, and endangered Myrtle's silverspot butterfly that will be insignificant, discountable, or entirely beneficial. However, based on our analysis, the Service has determined that the proposed project will result in significant long-term benefits to these two listed animals and the proposed critical habitat, and any adverse effects will minor and temporary in nature. This biological opinion analyses these effects of the project on the California red-legged frog, the proposed critical habitat for the California red-legged frog, and the Myrtle's silverspot butterfly.

Consultation History

March 1, 2004: Chris Nagano and Roberta Gerson of the Service met with Don Neubacher, Sara Allen, Roger Wong, Jane Rodgers, and Wendy Poinsot of the National Park Service regarding the proposed project.

March 4, 2004: Chris Nagano of the Service sent an e-mail to Sarah Allen of the National Park Service requesting additional information on the project.

March 4, 2004: Sarah Allen of the National Park Service sent information on the proposed project to Chris Nagano of the Service.

April 5, 2004: Sarah Allen of the National Park Service and Chris Nagano of the Service discussed the potential effects of the proposed project in the California red-legged frog, Myrtle's silverspot butterfly, and Sonoma Alopecurus.

April 28, 2004: Sarah Allen of the National Park Service sent information on the northern spotted owl to Roberta Gerson of the Service.

April 28, 2004: Sarah Allen of the National Park Service sent additional information on the northern spotted owl to Roberta Gerson of the Service.

May 24, 2004: The Service sent Point Reyes National Seashore and the Golden Gate National Recreation Area a draft of the biological opinion for their review and comment.

May 28, 2004: The National Park Service sent the Service comments and suggestions on the draft biological opinion.

BIOLOGICAL OPINION

Description of the Proposed Action

The purpose of the Fire Management Plan is to provide a framework for all fire management activities for Point Reyes National Seashore and the North District of the Golden Gate National Recreation Area, including suppression of unplanned ignitions, prescribed fire, and mechanical fuels treatments. It is intended to guide the Fire Management Plan for approximately the next 10-15 years. The plan includes concise program objectives, details on staffing and equipment, and comprehensive information, guidelines, and protocols relating to the management of unplanned wildfire, prescribed burning, and mechanical fuels treatment. The Fire Management Plan is described in detail in the DEIS.

Alternative C, the preferred alternative in the DEIS, and the alternative whose effects on listed species is analyzed in this biological opinion, would include increase reduction of hazardous fuels in high priority areas (e.g., along road corridors, around structures, and in strategic areas to create fuel breaks). According to the DEIS, up to 8648.5 hectares (ha)(3,500 acres) could be treated per year using prescribed fire and mechanical treatments. Page 106 of the DEIS states that there are a total of 52129.7 ha (21096.6 acres) in the Fire Management Units. Under Alternative C, research efforts would be expanded to determine the effects of fire on natural resources of concern (e.g., rare and non-native species) and to determine the effectiveness of various fuels treatments. Research results would be used adaptively to guide the Fire Management Plan in maximizing benefits to natural resources, while protecting lives and property.

Proposed Conservation Measures

Fuel reduction actions described in the DEIS would be implemented in conjunction with avoidance measures designed to minimize or avoid potential environmental effects to listed species. In many cases, specific avoidance measures have been developed for the protection of individual listed species. The following general avoidance measures have been developed and would be applied to each fire management action with potential to affect a listed species or its habitat:

1. To ensure that implementation of fire management plan actions conforms to findings of this impact assessment, subsequent fire year plans and individual projects would be subject to National Park Service project review. Prior to approval, all projects would be submitted through a National Park Service internal review process wherein an interdisciplinary team would evaluate if the potential effects of the proposed projects were adequately addressed through the Fire Management Plan National Environmental Quality Act process. Conformance to the conclusions in the Fire Management Plan Environmental Impact Statement will be documented for the National Environmental Quality Act record by a memorandum to the file. If the interdisciplinary team finds that the project has the potential for new environmental effects not addressed in the Environmental Impact Statement (EIS) or effects greater than those assessed in the EIS, a separate environmental process would be conducted.

2. Known populations of special-status plant and animal species would be monitored to ensure long-term impacts are avoided. Geographic information system maps of population locations will be kept current and available for consultation in case of uncontrolled wildland fire and for planning prescribed burns. To the extent possible, known populations of special status species would be avoided when locating fire lines, helispots or spike camps during wildfire suppression actions. If new populations are discovered or existing populations expanded, species-specific measures described in the DEIS will be applied. Similarly, new information will be incorporated through the individual project review process.

Species-Specific Conservation Measures for The Two Listed Species

Myrtle's Silverspot Butterfly

The DEIS includes a number of specific conservation measures for the endangered Myrtle's silverspot butterfly. During the pre-project analysis within the Tomales Fire Management Unit, the prescribed fire and mechanical treatment will include surveys for western dog violet (*Viola adunca*), the larvae foodplant, within grassland communities between March 1 and August 31. If the foodplant is found within proposed project areas, then surveys for adults will be done between July 1 and August 31 on a three-week rotation. If the surveys locate the butterfly, further analysis will be done to determine if the project can go forward without harassment to the species. The projects may be either cancelled or reconfigured to accommodate the species; burning and mechanical treatments will not occur during the flight season of Mrytle's silverspot buttefly (June 1 through August 31). The project will proceed if Myrtle's silverspot butterfly are not located during the surveys; additional monitoring will be conducted for *Viola adunca* and the listed animal. The project may go forward if *Viola adunca* is not found; burning and mechanical treatments will not occur during the flight season of the listed butterfly.

California Red-legged Frog

According to the DEIS, areas inhabited by the California red-legged frogs that will be treated by

mechanical means or prescribed fire would have a buffer area of 9.15 m (30 ft) established around known breeding habitat. This buffer will be established 9.15-m (30-ft) from the outer edge of riparian vegetation.

Status of the Species

Myrtle's silverspot butterfly

Myrtle's silverspot butterfly was listed as an endangered species in 1992 (57 **FR** 27848). A detailed account of the taxonomy, ecology, and biology of the species is presented in the *Recovery Plan for Seven Coastal Plants and the Myrtle's Silverspot Butterfly* (Service 1998). This butterfly is one of four related coastal subspecies of *Speyeria zerene* that occur from Washington to California: the threatened Oregon silverspot buttefly (*Speyeria zerene hippolyta*), endangered Behrens' silverspot (*Speyeria zerene behrensii*), glorius silverspot (*Speyeria zerene gloriosa*) and Myrtle's silverspot. All three listed silverspot butterflies occupy restricted habitat types close to the coast, and have been seriously impacted by human activities.

Myrtle's silverspot butterfly inhabits coastal dunes, coastal prairie, and coastal scrub at elevations ranging from sea level to 300 m (1,000 ft), and as far as 5 kilometers (km)(3 miles) inland (Launer *et al.* 1992). The adult butterflies prefer areas protected from onshore winds, but can be observed in exposed areas when winds are calm.

Critical factors in the distribution of Myrtle's silverspot butterfly include presence of the presumed larval host plant, western dog violet, and availability of nectar sources for adults. Although alternate larval host plants have neither been confirmed nor ruled out for the Myrtle's silverspot butterfly, other subspecies of *Speyeria zerene* and other species of silverspot butterflies can feed on more than one species in the genus *Viola*. Seeds of *Viola* are often dispersed by ants. Violets sometimes bear self-pollinating flowers, and are also cross-pollinated by insects. Adult Myrtle's silverspot butterflies have been observed nectaring on non-native species such as bull thistle (*Cirsium vulgare*) and rarely Italian thistle (*Carduus pycnocephalus*). In dune scrub habitat, these butterflies seek nectar from several native species such as gum plant (*Grindelia* sp.), western pennyroyal (*Monardella undulata*), yellow sand verbena (*Abronia latifolia*), seaside daisy (*Erigeron glaucus*), and mule ears (*Wyethia* sp.). Other flowering plants that might serve as good nectar sources for the opportunistic adults, such as brownie thistle (*Cirsium quercetorum*) and groundsel (*Senecio* sp.). The related threatened Oregon silverspot butterfly has been observed to visit yarrow (*Achillea millefolium*), goldenrod (*Solidago* sp.), beach aster (*Aster chilensis*), the non-native rough cat's-ear (*Hypochaeris radicata*), and pearly everlasting (*Anaphalis margaritacea*).

Female Myrtle's silverspot butterflies lay their eggs singly on or near dried leaves and stems of violets. Within a few days after the eggs are laid, the larvae (caterpillars) hatch, feed on the lining of the egg, crawl a short distance into the surrounding foliage or litter, and spin a silk pad on which they spend the summer, fall, and winter. The period of inactivity is a resting state

called diapause, during which time the animals do not feed. The larvae may be able to extend their diapause for more than one year. Upon termination of diapause in the spring, the caterpillar finds a nearby violet and begins feeding. Feeding may be difficult to observe, and occurs at dusk and possibly at night. The larval feeding stage lasts about 7–10 weeks, after which the larvae form their pupae within a chamber they make with leaves spun together with silk. The adult butterfly emerges from the pupa after about a few weeks or possibly months.

The flight season for Myrtle's silverspot butterfly extends from mid-June to early October (Launer *et al.* 1992), during this time period they mate, lay eggs, and die. Adult activity is closely tied to weather conditions: they are active during calm weather and inactive during windy periods. Both sexes are good flyers and can travel kilometers in search of nectar, mates, or violets. Following the flight season, eggs and active larvae are present for an additional week or two in the fall, and then the larvae then enter their diapause. The larvae resume activity and begin feeding at some point during the spring that varies depending on the weather.

Historically, Myrtle's silverspot butterfly was recorded from the north-central coast of California, including San Mateo County as far south as Pescadero (in 1950), north to the vicinity of Black Point in northern Sonoma County. By the late 1970s, populations of silverspot south of the Golden Gate Bridge were believed to be extinct and extant populations were known only from Marin County at the Point Reyes National Seashore. In 1990, an additional population was discovered at a site in northernmost coastal Marin County, on property proposed for a golf resort and residential development. The proposal for the golf course was withdrawn and later replaced with a proposal for low density residential development and open space at the same site. This site was estimated to support between 2,500 and 5,000 adult silverspots in 1991. Two apparently separate populations in Point Reyes National Seashore were estimated at less than 5,000 individuals and several hundred individuals, respectively, in 1993. No trends over time are discernable in the limited population data. In summary, this butterfly is currently known from three occurrences with a probable total of fewer than 10,000 individuals. Population sizes of the species can be expected to fluctuate widely.

The listing of the Myrtle's silverspot was based on its extirpation from the southern third of its historical range (south of the Golden Gate Bridge) and adverse effects of urban development, invasive non-native vegetation, livestock grazing, and other human influences throughout its range. Myrtle's silverspot butterfly occurs in separate populations whose long-term persistence may depend upon movement between populations. Habitat degradation resulting in the loss of intervening populations, larval food plants, and adult nectar sources may make movements between populations more difficult. Illegal collection is also a threat to Myrtle's silverspot. Specimens of Myrtle's silverspot butterfly are known to have been illegally collected in Point Reyes National Seashore. Illegal collection of adults is likely to continue at a level that is difficult to quantify. Substantial areas of habitat and potential habitat for Myrtle's silverspot are protected in the Point Reyes National Seashore and the northern unit of the Golden Gate National Recreation Area.

There are recent sightings of Myrtle's silverspot butterfly within the Tomales Point Fire Management Unit at Point Reyes National Seashore, although suitable habitat elsewhere at this National Park and possibly the Golden Gate National Recreation Area (California Department of Fish and Game 2004; DEIS; Service files). In addition, adult Myrtle's silverspot butterflies are highly mobile and, like other silverspot butterflies, may fly considerable distances (Nagano pers. obs). Suitable habitat is found in and adjacent to the action area. Areas of containing larvae and adult food sources exist within the action area. The action area contains components that can be used by Myrtle's silverspot butterfly for feeding, resting, mating, movement corridors, and other essential behaviors. Therefore, the Service believes that Myrtle's silvespot butterfly is reasonably certain to occur within the action area because of the biology and ecology of the animal, the presence of suitable food sources and habitat in and adjacent to the action area, as well as the recent observations of this listed species.

California red-legged frog

The California red-legged frog was listed as a threatened species on May 23, 1996, (61 **FR** 25813). Please refer to the final rule and the Recovery Plan for this animal for additional information. This species is the largest native frog in the western United States (Wright and Wright 1949), ranging from 4 to 13 cm (1.5 to 5.1 in) in length (Stebbins 1985). The abdomen and hind legs of adults are largely red; the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. Dorsal spots usually have light centers (Stebbins 1985), and dorsolateral folds are prominent on the back. Larvae (tadpoles) range from 14 to 80 millimeters (mm)(0.6 to 3.1 in) in length, and the background color of the body is dark brown and yellow with darker spots (Storer 1925).

California red-legged frogs have paired vocal sacs and vocalize in air (Hayes and Krempels 1986). Female frogs deposit egg masses on emergent vegetation so that the egg mass floats on the surface of the water (Hayes and Miyamoto 1984). California red-legged frogs breed from November through March with earlier breeding records occurring in southern localities (Storer 1925). Individuals occurring in coastal drainages are active year-round (Jennings *et al.* 1992), whereas those found in interior sites are normally less active during the cold season.

Adult California red-legged frogs prefer dense, shrubby or emergent riparian vegetation closely associated with deep (>0.7 m [2.3 ft]), still, or slow-moving water (Hayes and Jennings 1988). However, frogs also have been found in ephemeral creeks and drainages and in ponds that may or may not have riparian vegetation. The largest densities of California red-legged frogs currently are associated with deep pools with dense stands of overhanging willows (*Salix* spp.) and an intermixed fringe of cattails (*Typha latifolia*) (Jennings 1988). California red-legged frogs disperse upstream and downstream of their breeding habitat to forage and seek sheltering habitat. Sheltering habitat for California red-legged frogs is potentially all aquatic, riparian, and upland areas within the range of the species and includes any landscape features that provide cover, such as existing animal burrows, boulders or rocks, organic debris such as downed trees or logs, and

industrial debris. Agricultural features such as drains, watering troughs, spring boxes, abandoned sheds, or hay ricks may also be used. Incised stream channels with portions narrower than 46 cm (18 in) and depths greater than 46 cm (18 in) may also provide important summer sheltering habitat. Accessability to sheltering habitat is essential for the survival of California red-legged frogs within a watershed, and can be a factor limiting frog population numbers and survival. During winter rain events, juvenile and adult California red-legged frogs are known to disperse up to 1-2 km (0.54-1.08 mi) (Rathbun and Holland, unpublished data, cited in Rathbun *et al.* 1997). Dispersing frogs in northern Santa Cruz County traveled distances from 0.4 km (0.25 mi) to more than 3 km (2 mi) without apparent regard to topography, vegetation type, or riparian corridors (Bulger, unpublished data).

Egg masses contain about 2,000 to 5,000 moderate sized (2.0 to 2.8 mm [0.08 to 0.11 in] in diameter), dark reddish brown eggs and are typically attached to vertical emergent vegetation, such as bulrushes (*Scirpus* spp.) or cattails (Jennings *et al.* 1992). California red-legged frogs are often prolific breeders, laying their eggs during or shortly after large rainfall events in late winter and early spring (Hayes and Miyamoto 1984). Eggs hatch in 6 to 14 days (Jennings 1988). In coastal lagoons, the most significant mortality factor in the pre-hatching stage is water salinity (Jennings *et al.* 1992); eggs exposed to salinity levels greater than 4.5 parts per thousand result in 100 percent mortality (Jennings and Hayes 1990). Increased siltation during the breeding season can cause asphyxiation of eggs and small larvae. Larvae undergo metamorphosis 3.5 to 7 months after hatching (Storer 1925; Wright and Wright 1949; Jennings and Hayes 1990). Of the various life stages, larvae probably experience the highest mortality rates, with less than 1 percent of eggs laid reaching metamorphosis (Jennings *et al.* 1992). Sexual maturity normally is reached at 3 to 4 years of age (Storer 1925; Jennings and Hayes 1985). California red-legged frogs may live 8 to 10 years (Jennings *et al.* 1992). Populations of California red-legged frogs fluctuate from year to year. When conditions are favorable California red-legged frogs can experience extremely high rates of reproduction and thus produce large numbers of dispersing young and a concomitant increase in the number of occupied sites. In contrast, California red-legged frogs may temporarily disappear from an area when conditions are stressful (e.g., drought).

The diet of California red-legged frogs is highly variable. Hayes and Tennant (1985) found invertebrates to be the most common food items. Vertebrates, such as Pacific tree frogs (*Hyla regilla*) and California mice (*Peromyscus californicus*), represented over half the prey mass eaten by larger frogs (Hayes and Tennant 1985). Hayes and Tennant (1985) found juvenile frogs to be active diurnally and nocturnally, whereas adult frogs were largely nocturnal. Feeding activity probably occurs along the shoreline and on the surface of the water (Hayes and Tennant 1985). Larvae likely eat algae (Jennings *et al.* 1992).

Several researchers in central California have noted the decline and eventual disappearance of California red-legged frog populations once bullfrogs became established at the same site (L. Hunt, in litt. 1993; S. Barry, in litt. 1992; S. Sweet, in litt. 1993). This has been attributed to both predation and competition. Twedt (1993) documented bullfrog predation of juvenile northern red-legged frogs, and suggested that bullfrogs could prey on subadult northern red-

legged frogs as well. In addition to predation, bullfrogs may have a competitive advantage over California red-legged frogs; bullfrogs are larger, possess more generalized food habits (Bury and Whelan 1984), have an extended breeding season (Storer 1933) during which an individual female can produce as many as 20,000 eggs (Emlen 1977), and larvae are unpalatable to predatory fish (Kruse and Francis 1977). In addition to competition, bullfrogs also interfere with California red-legged frog reproduction. Both California and northern red-legged frogs have been observed in amplexus with (mounted on) both male and female bullfrogs (Jennings and Hayes 1990; Twedt 1993; M. Jennings, in litt.1993; R. Stebbins in litt. 1993). Thus bullfrogs are able to prey upon and out-compete California red-legged frogs, especially in sub-optimal habitat.The urbanization of land within and adjacent to California red-legged frog habitat has also impacted California red-legged frogs. These declines are attributed to channelization of riparian areas, enclosure of the channels by urban development that blocks California red-legged frog dispersal, and the introduction of predatory fishes and bullfrogs. This report further identifies the conversion and isolation of perennial pool habitats resulting from urbanization as an ongoing impact to California red-legged frogs.

Juvenile and adult frogs, including California red-legged frogs, have been found in human-created habitats such as golf course ponds, but these habitats may not be suitable for the long-term survival or successful reproduction of local frog populations, especially near urban areas where predators such as bullfrogs and racoons are able to build up large populations (Service 2002). In the Central Coast area of California, which contains the largest known California red-legged frog populations, California red-legged frogs are known from three golf courses (Froke pers. comm.). Two of these golf courses are also inhabited by bullfrogs, and the two species are found in separate ponds. Within Alameda and Contra Costa counties we are not aware of California red-legged frogs inhabiting ponds within golf courses. In Solano County, red-legged frogs were found in large numbers immediately after the construction of water features within one golf course, however this population has been nearly eliminated by a substantial bullfrog population, and perhaps by water chemistry manipulation by the golf course in a pond used as a watering source.

California red-legged frogs have been extirpated or nearly extirpated from over 70 percent of their former range. Historically, this species was found throughout the Central Valley and Sierra Nevada foothills. As of 1996, California red-legged frogs have been documented in approximately 240 streams or drainages from 23 counties, primarily in central coastal California. Monterey, San Luis Obispo, and Santa Barbara counties support the largest extent of currently occupied habitat. The most secure aggregations of California red-legged frogs are found in aquatic sites that support substantial riparian and aquatic vegetation and lack non-native predators. Several researchers in central California have noted the decline and eventual local disappearance of California and northern red-legged frogs in systems supporting bullfrogs (Jennings and Hayes 1990; Twedt 1993), red swamp crayfish (*Procambarus clarkii*), signal crayfish (*Pacifastacus leniusculus*), and several species of warm water fish including sunfish (*Lepomis* spp.), goldfish (*Carassius auratus*), common carp (*Cyprinus carpio*), and mosquitofish (*Gambusia affinis*) (L. Hunt, in litt. 1993; S. Barry, in litt. 1992; S. Sweet, in litt. 1993). Habitat

loss, non-native species introduction, and urban encroachment are the primary factors that have adversely affected the California red-legged frog throughout its range.

The recovery plan for the California red-legged frog identifies eight recovery units. Each recovery unit reflects areas with similar conservation needs. The strategy for recovery of California red-legged frogs includes promoting and protecting populations that are geographically distributed in a manner that allows for the continued existence of viable metapopulations. The establishment of these recovery units is based on the recovery team's determination that various regional areas of the species' range are essential to its overall survival and recovery because these units will ensure that the strategy for recovery of the species will be implemented. The draft recovery plan specifies that the status of the California red-legged frog should be considered within the smaller scale of recovery units as opposed to the overall range of the species because these units reflect areas with similar conservation needs. Furthermore, this strategy will promote and protect the continued existence of viable metapopulations. These recovery units are delineated by major watershed boundaries, as defined by U.S. Geological Survey hydrologic units and California Department of Fish and Game's Ichthyological Provinces, and the limits of the range of the California red-legged frog. The goal of the recovery plan is to protect the long-term viability of all extant populations within each recovery unit. Within each recovery unit, core areas have been delineated and represent contiguous areas of moderate to high California red-legged frog densities that are relatively free of exotic species such as bullfrogs. The goal of designating core areas is to protect metapopulations that, combined with suitable dispersal habitat, will allow for the long term viability within existing populations. This management strategy will allow for the recolonization of habitat within and adjacent to core areas that are naturally subjected to periodic localized extinctions, thus assuring the long-term survival and recovery of the California red-legged frog.

The historic range of the red-legged frog extended coastally from the vicinity of Point Reyes National Seashore, Marin County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico (Jennings and Hayes 1985; Hayes and Krempels 1986). The California Red-legged frog was historically documented with 46 counties but the taxa now remains in 238 streams or drainages within 23 counties, representing a loss of 70 percent of its former range (Service 2002, 61 **FR** 25813). Red-legged frogs are still locally abundant within portions of the San Francisco Bay area and the central coast. Within the remaining distribution of the species, only isolated populations have been documented in the Sierra Nevada, northern Coast, and northern Transverse Ranges. The species is believed to be extirpated from the southern Transverse and Peninsular ranges, but is still present in Baja California, Mexico (California Department of Fish and Game 2002).

The recovery plan for the California red-legged frog identifies eight recovery units (Service 2002). The establishment of these recovery units are based on the Recovery Team's determination that various regional areas of the species' range are essential to its survival and recovery. The status of the California red-legged frog will be considered within the smaller scale of Recovery Units as opposed to the overall range. These recovery units are delineated by major

watershed boundaries as defined by U.S. Geological Survey hydrologic units and the limits of the range of the red-legged frog. The goal of the recovery plan is to protect the long-term viability of all extant populations within each recovery unit. Within each recovery unit, core areas have been delineated and represent contiguous areas of moderate to high California red-legged frog densities that are relatively free of exotic species such as bullfrogs. The goal of designating core areas is to protect metapopulations that, combined with suitable dispersal habitat, will allow for the long term viability within existing populations. This management strategy will allow for the recolonization of habitat within and adjacent to core areas that are naturally subjected to periodic localized extinctions, thus assuring the long-term survival and recovery of California red-legged frogs.

The Fire Management Plan is located within the North San Francisco Bay/North Coast recovery unit which includes portions of watersheds at Point Reyes National Seashore and Golden Gate National Recreation Area. Within this recovery unit, California red-legged frogs are threatened primarily by water management and diversions, non-native species, livestock, and urbanization. Populations of the California red-legged frog in this region are relatively robust where habitat is available. California red-legged frogs have been observed extensively within the boundaries of grazed and ungrazed lands within Point Reyes National Seashore and Golden Gate National Recreation Area. A number of created breeding ponds within Point Reyes National Seashore and Golden Gate National Recreation Area are at risk due to deteriorating dams.

There are recent sightings of the California red-legged frog throughout Point Reyes National Seashore, and possibly the Golden Gate National Recreation Area (California Department of Fish and Game 2004; DEIS; Service files; National Park Service undated). In addition, adult California red-legged frogs are highly mobile and may move considerable distances from their breeding ponds. Suitable habitat is found in and adjacent to the action area. Areas of containing aquatic and upland habitat exist within the action area. The action area contains components that can be used by the California red-legged frog for feeding, resting, mating, movement corridors, and other essential behaviors. Therefore, the Service believes that the California red-legged frog is reasonably certain to occur within the action area because of the biology and ecology of the animal, the presence of suitable habitat in and adjacent to the action area, as well as the recent observations of this listed species.

California Red-Legged Frog Proposed Critical Habitat

In March 2001, the final rule determining critical habitat for red-legged frogs was published in the Federal Register (66 **FR** 14626). This rule established 31 Critical Habitat Units based on three primary constituent elements: (a) essential aquatic habitat; (b) associated uplands; and (c) dispersal habitat connecting essential aquatic habitat. In November 2002, the U.S. District Court for the District of Columbia vacated most of the 2001 designation and ordered the Service to publish a new critical habitat proposal. On April 13, 2004, the Service re-proposed 4.1 million acres in 28 California counties as critical habitat for the frog (69 **FR** 19620). This proposed rule basically re-proposes the same areas designated critical habitat in the 2001 final rule. The

proposed Fire Management Plan is located within one of the proposed critical habitat units.

In determining which areas to designate as critical habitat, the Service considers those physical and biological features (primary constituent elements) that are essential to the conservation of the species, and that may require special management considerations and protection (50 CFR § 424.14). The Service lists the known primary constituent elements together with the proposed critical habitat description. Such physical and biological features include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, rearing (or development) of offspring; and habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

Due to the complex life history and dispersal capabilities of the California red-legged frog, and the dynamic nature of the environments in which they are found, the primary constituent elements described below are found throughout the watersheds that are proposed as critical habitat. Special management, such as habitat rehabilitation efforts (*e.g.*, removal of nonnative predators), may be necessary in the area designated. The proposed critical habitat for the California red-legged frog provides for breeding and nonbreeding habitats and for dispersal between these habitats, as well as allowing for expansion of frog populations vital to the recovery of the subspecies. The proposed critical habitat includes: (a) essential aquatic habitat; (b) associated uplands; and (c) dispersal habitat connecting essential aquatic habitat.

Aquatic habitat is essential for providing space, food, and cover, necessary to sustain all life stages of red-legged frogs. It consists of virtually all low-gradient fresh water bodies, including natural and man-made (*e.g.*, stock) ponds, backwaters within streams and creeks, marshes, lagoons, and dune ponds, except deep lacustrine water habitat (*e.g.*, deep lakes and reservoirs 123.55 ha [50 acres] or larger in size) inhabited by nonnative predators. The subspecies requires a permanent water source to ensure that aquatic habitat is available year-round. Permanent water sources can include, but are not limited to, ponds, perennial creeks, permanent plunge pools within intermittent creeks, seeps, and springs. Aquatic habitat used for breeding usually has a minimum deep water depth of 50.8 cm (20 in), and maintains water during the entire tadpole rearing season (at least March through July). During periods of drought, or less-than-average rainfall, these breeding sites may not hold water long enough for individuals to complete metamorphosis, but because they support breeding in wetter years these sites would still be considered essential breeding habitat. Ponds that support a small population of red-legged frogs, but are not surrounded by suitable upland habitat, or are cut off from other breeding ponds or permanent water sources by impassable dispersal barriers, do not have the primary constituent elements for proposed California red-legged frog critical habitat.

To be a primary constituent element for California red-legged frog proposed critical habitat, the aquatic components within the designated boundaries must include two or more breeding sites (as defined above) located within 2.01 km (1.25 mi) of each other; at least one of the breeding

sites must also be a permanent water source; or, the aquatic component can consist of two or more seasonal breeding sites with a permanent nonbreeding water source located within 2.01 km (1.25 mi) of each breeding site. California red-legged frogs have been documented to travel 3.62 km (2.25 mi) in a virtual straight line migration from nonbreeding to breeding habitats (66 **FR** 14626). In addition, breeding sites must be connected by dispersal habitat connecting essential aquatic habitat, described below.

Associated upland and riparian habitat is essential to maintain California red-legged frog populations associated with essential aquatic habitat. The associated uplands and riparian habitat provide food and shelter sites for California red-legged frogs, and assist in maintaining the integrity of aquatic sites by protecting them from disturbance and supporting the normal functions of the aquatic habitat. Key conditions include the timing, duration, and extent of water moving within the system, filtering capacity, and maintaining the habitat to favor red-legged frogs and discourage the colonization of nonnative species such as bullfrogs. Essential upland habitat consists of all upland areas within 91.5 m (300 ft), or no further than the watershed boundary, of the edge of the ordinary high-water mark of essential aquatic habitat (66 **FR** 14626).

Essential dispersal habitat provides connectivity among California red-legged frog breeding habitat (and associated upland) patches. While frogs can pass many obstacles, and do not require a particular type of habitat for dispersal, the habitat connecting essential breeding locations and other aquatic habitat must be free of barriers (*e.g.*, a physical or biological feature that prevents frogs from dispersing beyond the feature) and at least 91.5 m (300 ft) wide. Essential dispersal habitat consists of all upland and wetland habitat free of barriers that connects two or more patches of essential breeding habitat within 2.01 km (1.25 mi) of one another. Dispersal barriers include heavily traveled roads (an average of 30 cars per hour from 10:00 p.m. to 4:00 a.m.) that possess no bridges or culverts; moderate to high density urban or industrial developments; and large reservoirs more than 123.55 ha (50 acres) in size. Agricultural lands such as row crops, orchards, vineyards, and pastures do not constitute barriers to California red-legged frog dispersal.

Point Reyes National Seashore and the Golden Gate National Recreation Area occur within the proposed Point Reyes Unit (Unit 12), which consists of watersheds within and adjacent to Bolinas Lagoon, Point Reyes, and Tomales Bay in Marin and Sonoma counties. This proposed unit encompasses approximately 81,168 ha (200,572 acres); 44 percent is managed by the National Park Service, California Department of Parks and Recreation, and the Marin Municipal Water District, and 56 percent is privately owned. The proposed Unit 12 is known to be occupied by several populations of the California red-legged frog. Essential breeding habitat is dispersed throughout the proposed unit. This proposed unit contains one of the largest known populations of the California red-legged frog.

Effects of the Proposed Action

Myrtle's silverspot butterfly

Burning activities within the habitat of the silverspot may result in the incineration of eggs, larvae, and adults, or the injury or death of these life history stages due to smoke inhalation. Insects breathe via spiracles and inhalation of small particles could prevent their respiration and result in their asphyxiation. In addition, the foodplants of the larvae and/or adult nectar plants could be eliminated by burning. Eggs, larvae, and pupae also may be killed as a result of being trampled or killer by during the maintenance of fire roads and trails, and during mechanical treatments. Although surveys will be conducted for the western dog violet, the foodplant of the larvae, between March 1 and August 31, during the remainder of the year the plant dries out and is difficult to locate; in addition, the early stages of this animal are highly cryptic and often overlooked by non-specialists. However, the Fire Management Plan will eliminate invasive exotic plants that compete with native plants utilized by all life history stages of Myrtle's silverspot butterfly and thus result in significant long-term benefits to the survival and recovery of this listed animal in the wild.

California Red-legged Frog

Considering Point Reyes National Seashore and the northern unit of the Golden Gate National Recreation Area supports some of the most robust California red-legged frog populations in the State, and fire is an important component of natural ecosystems in this region of California, the Fire Management Plan will result in long-term beneficial effects to the listed amphibian. In fact, fire likely is very important for maintaining the habitats of the California red-legged frog. However, in the short term, heat and smoke from the fires may kill or injure individuals. Adults or early stages of the California red-legged frog may be adversely affected by increased levels of sedimentation into aquatic habitats caused by runoff from burned areas. If heavy sedimentation occurs in pools where California red-legged frogs breed, it is possible that California red-legged frog egg masses will suffocate from being buried under sediments. Without adequate measures, heavy loss of sediments from the streambed may result in down-cutting of channels which could further degrade the stability of banks, and functions of the riparian ecosystem.

The maintenance of fire roads and trails, and mechanical treatments may result in killing or injuring California red-legged frogs which may be present during grading, vegetation removal or clearing, mowing, and other related activities. Clearing of vegetation (i.e., mowing, grubbing, etc.) may result in harm, harassment, or killing of California red-legged frogs. In addition, vehicular use of fire roads and other roads may result in mortality or injury of California red-legged frogs which may disperse across such roads.

California Red-legged Frog Proposed Critical Habitat

There will be effects to the proposed critical habitats in the sense that some primary constituent elements, notably upland and dispersal habitat, and perhaps breeding habitat will be disturbed. However, these effects are anticipated to be temporary in nature, and the proposed Fire Management Plan is anticipated to significantly improve the quality of the proposed critical habitat for the threatened California red-legged frog.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Land adjacent to and in the vicinity of Point Reyes National Seashore and the northern units of the Golden Gate National Recreation Area are owned by the California Department of Parks and Recreation, been purchased by non-profit groups for conservation purposes, or are otherwise unlikely to be converted to large scale developments. The Audubon Canyon Ranch includes an inholding on Bolinas Lagoon that connects the Golden Gate National Recreation Area to ands adjoining it. Other Audubon Canyon Ranch holdings on Tomales Bay protect undeveloped Bay frontage adjoining State Park lands. The Vedanta Society holds a 5295.35 ha (2,143 acre) parcel in the Olema Valley bounded by National Parks lands.

In 1971, the Marin County Supervisors enacted A-60 zoning (one house per 148.26 ha [60 acres]) for much of western Marin County, significantly limiting the development of agricultural properties. This zoning covers extensive areas of private lands adjoining public park and watersheds, including San Geronimo Valley, Nicasio Valley, and the northwestern portion of the County. Since 1971, zoning for the west Marin Planning Area has been elaborated to include a variety of zoning densities in areas adjacent to established towns, with minimum lot sizes ranging from one unit per acre to one unit per 148.26 ha (60 acres). The County's Local Coastal Program provides additional protection for streams, lagoons, Tomales Bay, and wetlands. The integrity of ranch and other agricultural lands is addressed in the agricultural element of the Countywide plan.

Agricultural lands in west Marin County have been and continue to be at risk of being broken up into large residential lots. The Marin Agricultural Land Trust has been acquiring development rights to agricultural land since 1980. At present, this non-profit organization holds the rights for over 74130 ha (30,000 acres) on 43 ranches in western Marin County.

The application of pesticides, herbicides, or fertilizers could degrade surface water quality in wetlands, including creeks and streams. Water quality may become impaired when

pesticides/fertilizers or sediment enters the proposed project from the surrounding residential area.

Urban development results in increased numbers of pets. Both feral and domestic cats (*Felis catus*) and dogs (*Canis domesticus*) prey on aquatic and riparian species such as the California red-legged frog. People exploring creeks can harass, collect, and kill California red-legged frogs. Many flood control projects replace natural streams with engineered channels and isolate them from their natural floodplains, disrupting natural hydrologic processes and degrading stream habitat. Flood channel maintenance often requires the removal of emergent aquatic and riparian vegetation, making these channels less suitable for California red-legged frogs.

Non-native species that prey upon, or compete with, California red-legged frogs continue to be released into the environment. Releases are likely to increase with an increasing number of people living in an area. Bullfrogs, goldfish, mosquitofish , and warm water game fish species are all expected to continue to persist in the wild and degrade the quality of California red-legged frog habitat. The introduced animals may also act as disease vectors and impact threatened/endangered species.

Conclusion

After reviewing the current status of the Myrtle's silverspot butterfly and the California red-legged frog, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that the Fire Management Plan at Point Reyes National Seashore and the northern unit of the Golden Gate National Recreation Area in Marin County, California, as proposed, is not likely to jeopardize the continued existence of these two species. The proposed project is not likely to destroy or adversely modify proposed California red-legged frog critical habitat. Critical habitat has not been designated or proposed for Myrtle's silverspot butterfly; therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not

intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the National Park Service that they become binding conditions of any contract, grant, or permit issued to a contractor or applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The National Park Service has a continuing duty to regulate the activity covered by this incidental take statement. If the National Park Service (1) fails to adhere to the terms and conditions of the incidental take statement in this biological opinion, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

The Service anticipates incidental take of Myrtle's silverspot butterfly and the California red-legged frog will be difficult to detect or quantify because of: the elusive nature of these species, relative size, and cryptic coloration which make the finding of a dead specimen unlikely. However, the level of take of each of these two species can be anticipated by the temporal effects to cover, foraging and breeding habitat. Conservation measures proposed by the National Park Service and described above in the *Description of the Proposed Action* will substantially reduce, but do not eliminate, the potential for incidental taking of these listed species. The Service, therefore, anticipates incidental take will result from the proposed project.

Upon implementation of the reasonable and prudent measures, take in the form of injury, death, harm, and harassment of the California red-legged frog and Myrtle's silverspot butterfly on 8648.5 ha (3,500 acres) per year (52130.44 ha [21096.9 acres] total) will become exempt from the prohibitions described under section 9 of the Act for direct and indirect effects associated with the Fire Management Plan.

Incidental take of the California red-legged frog and Myrtle's silverspot butterfly is expected in the form of:

1. thirty-five (35) California red-legged frogs per year may be killed or injured as a result of activities associated with the Fire Management Plan;

2. An unlimited number of individuals of all life history stages of Myrtle's silverspot butterfly will be killed, injured, harassed, or harmed as a result of the Fire Management Plan;

3. An unlimited number of the California red-legged frog will be harassed or harmed as a result of the Fire Management Plan.

Effect of the Take

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the California red-legged frog and Myrtle's silverspot butterfly or result in destruction or adverse modification of proposed critical habitat for the California red-legged frog. Critical habitat for Myrtle's silverspot butterfly has not been designated or proposed, therefore none will be affected.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize the impact of take on the California red-legged frog and Myrtle's silverspot butterfly:

> Minimize the potential for harm, harassment, injury, or mortality of Mrytle's silverspot butterfly and the California red-legged frog.

Terms and Conditions

To be exempt from the prohibitions of Section 9 of the Act, the National Park Service shall ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary. The following terms and conditions will implement the Reasonable and Prudent Measure described above:

1. The proposed project shall be implemented as described in the DEIS, and the April 1, 2004, letter from the National Park Service, and the *Project Description* of this biological opinion.

2. An education program for the field personnel involved with the Fire Management Plan shall be conducted prior to the initiation of field activities. The program shall consist of a brief presentation by a person(s) knowledgeable in the Myrtle's silverspot butterfly, the California red-legged frog, and other appropriate listed species. The program shall include the following: a description of these species and their ecology, and habitat needs; an explanation of their legal status and their protection under the Act; and a explanation of the measures being taken to avoid or reduce effects to these species during the Fire Management Plan. The education may be conducted in an informal manner (e.g., ranger and field personnel in a rural setting).

Reporting Requirements

The Service must be notified within 24 hours of the finding of any injured or dead Myrtle's silverspot butterfly or California red-legged frog, or any unanticipated damage to their habitats associated with the proposed project. Notification must include the date, time, and precise

location of the specimen/incident, and any other pertinent information. The Service contact person is the Chris Nagano, Deputy Assistant Field Supervisor (Endangered Species) at the Sacramento Fish and Wildlife Office at 916/414-6600. Any dead or injured specimens should be deposited with Scott Heard, Resident Agent-in-Charge of the Service's Division of Law Enforcement, 2800 Cottage Way, Room W-2928, Sacramento, California 95825, telephone 916/414-6660.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to implement recovery actions, to help implement recovery plans, to develop information, or otherwise further the purposes of the Act.

For the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, we request notification of the implementation of any of the conservation recommendations. We propose the following conservation recommendations:

1. The Service recommends the National Park Service implement the appropriate actions described in the *Recovery Plan for the California red-legged frog (Rana aurora draytonii)*.

2. The Service recommends the National Park Service implement the appropriate actions described in the *Recovery Plan for Seven Coastal Plants and the Myrtle's Silverspot Butterfly*.

3. The National Park Service should continue to encourage or require the use of appropriate locally collected California native plants in the restoration or enhancement of native species diversity and ecosystem functions at Point Reyes National Seashore and Golden Gate National Recreation Area.

4. The law enforcement rangers of the National Park should continue their vigilance for individuals who collect the endangered Myrtle's silverspot butterfly, other listed and rare butterflies without authorization on National Park Service lands. Illegal collection of butterflies has been documented by the Service to have occurred at Point Reyes National Seashore and Fort Baker (Cavallo Point) at the Golden Gate National Recreation Area.

REINITIATION STATEMENT

This concludes formal consultation on the proposed Fire Management Plan at Point Reyes National Seashore and the northern unit of the Golden Gate National Recreation Area in Marin County, California. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been

retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

If you have any questions regarding this biological opinion on the proposed Fire Management Plan, please contact Chris Nagano, Deputy Assistant Field Supervisor (Endangered Species) or Roberta Gerson (northern spotted owl), Chief of our Forest-Foothill Branch, at the letterhead address or at 916/414-6600.

cc:
USNPS, GGNRA, San Francisco, CA (Attn: Superintendent B. O'Neill)
USNPS, PRNS, Point Reyes Station, CA (Attn: Ranger S. Allen)
USNPS, GGNRA, San Francisco, CA (Attn: Ranger N. Hornor)
USNPS, GGNRA, San Francisco, CA (Attn: Ranger D. Hatch)
USNPS, GGNRA, San Francisco, CA (Attn: Ranger D. Fong)
USGS, Point Reyes Station, CA (Attn: G. Fellers)

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